

FIG. 1

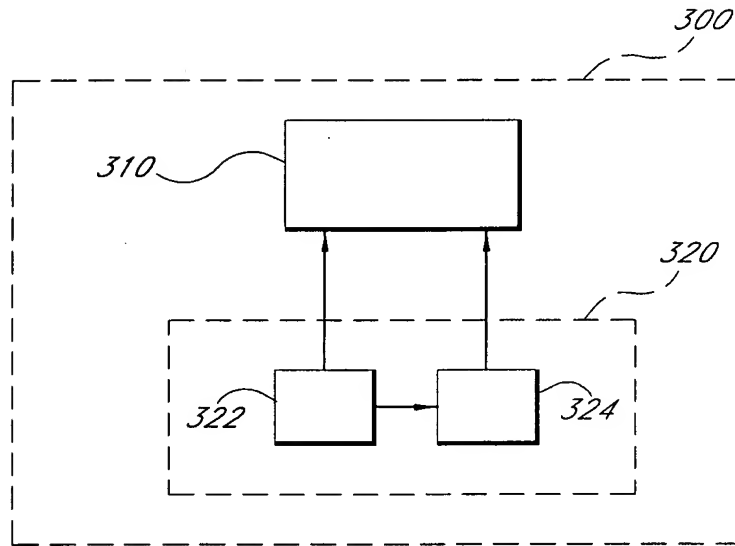


FIG. 2

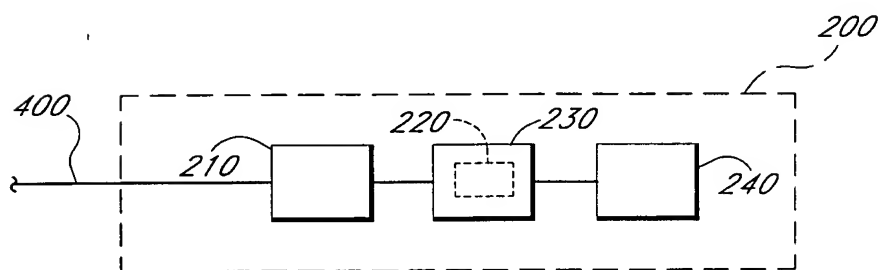


FIG. 3A

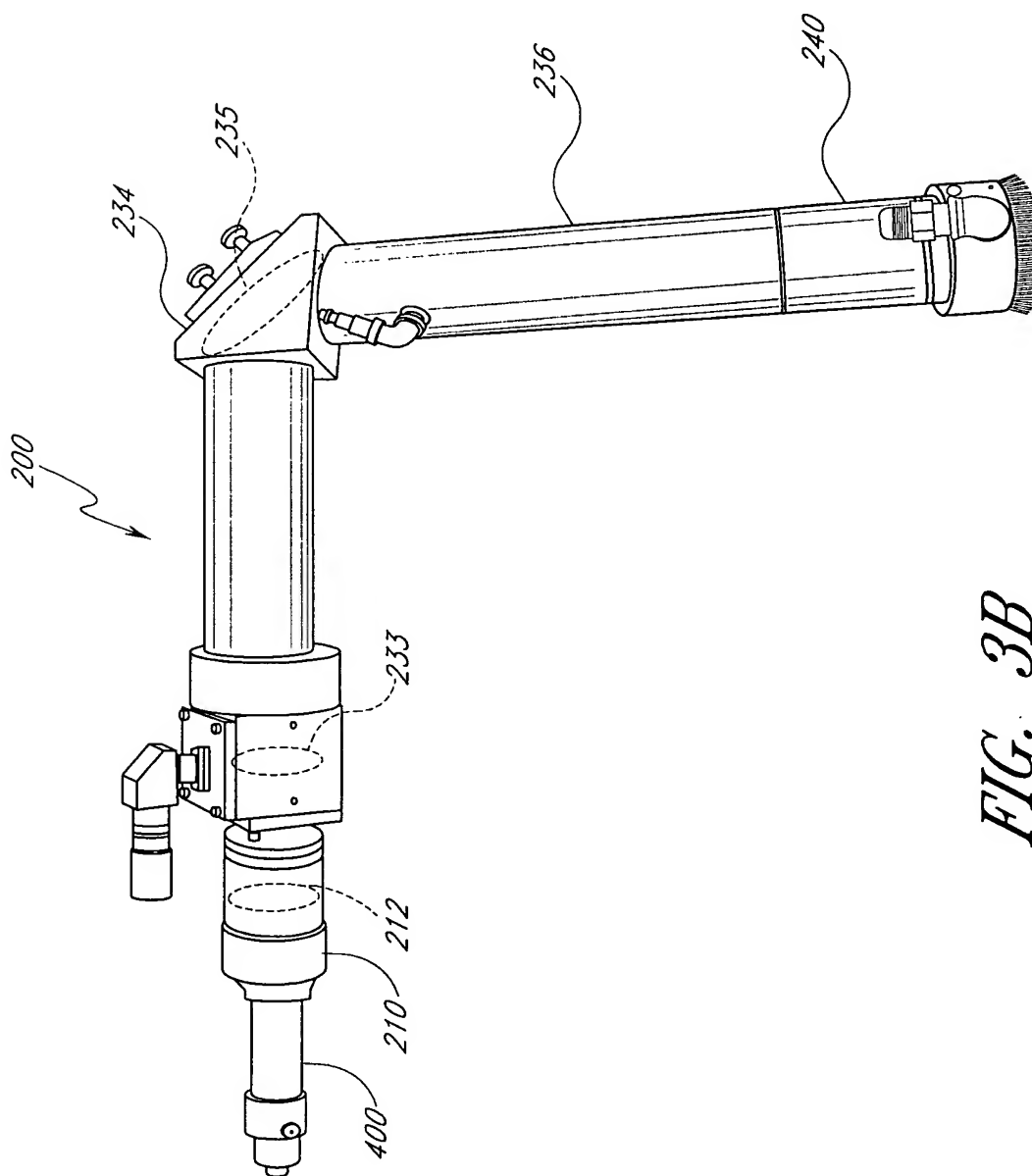


FIG. 3B

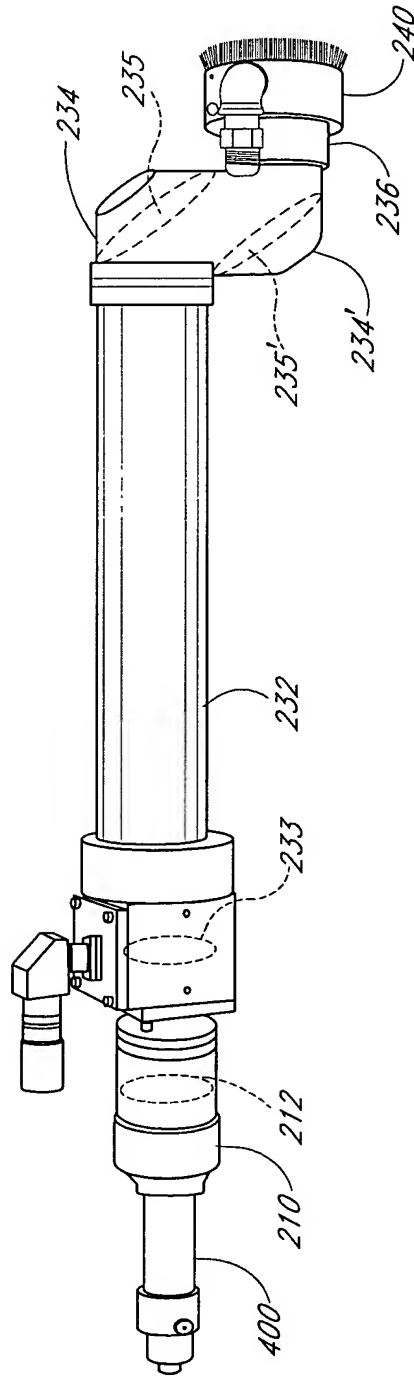


FIG. 3C

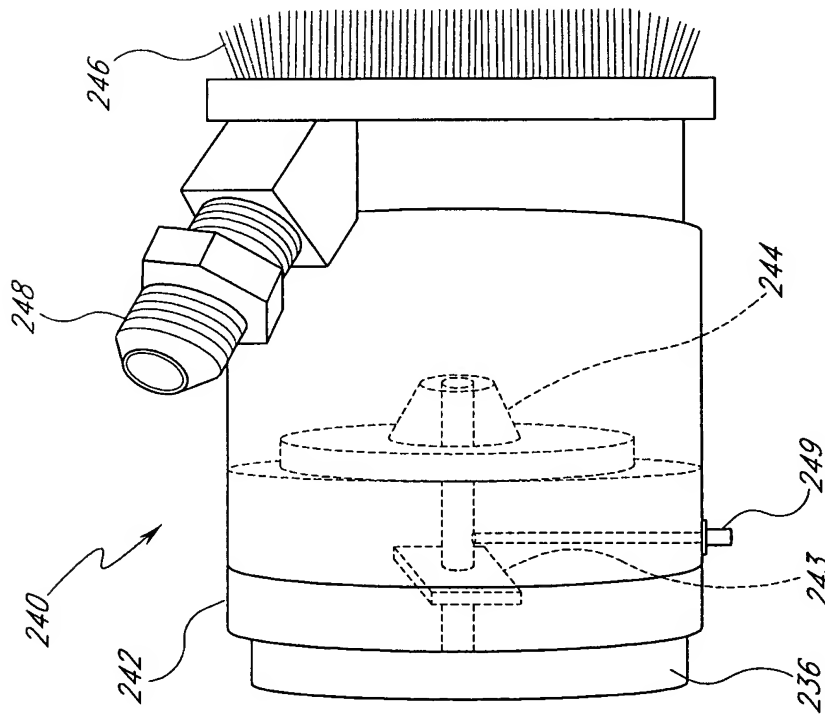


FIG. 4

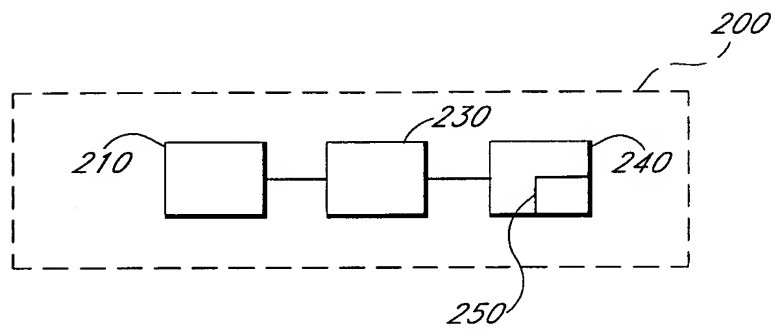
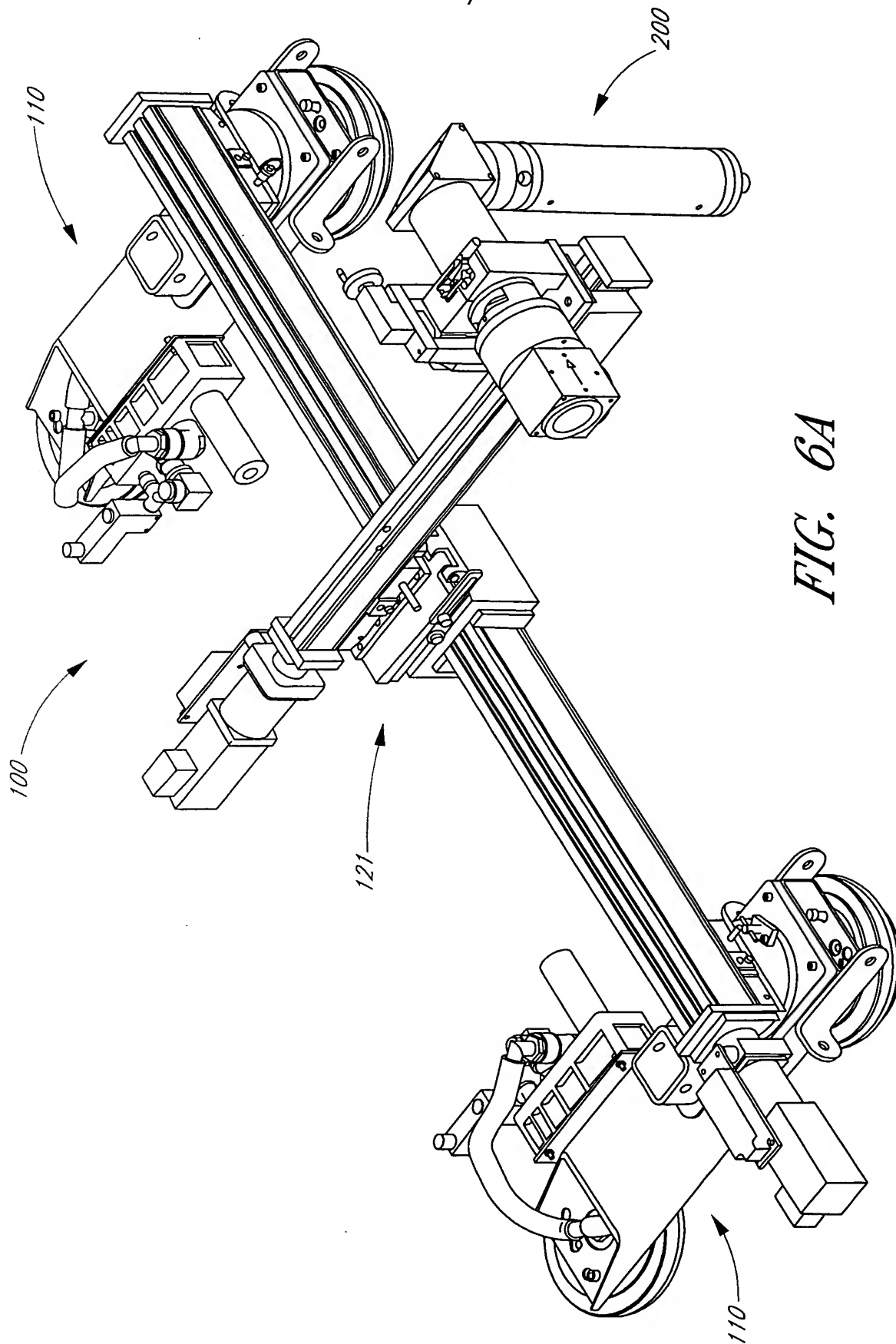


FIG. 5



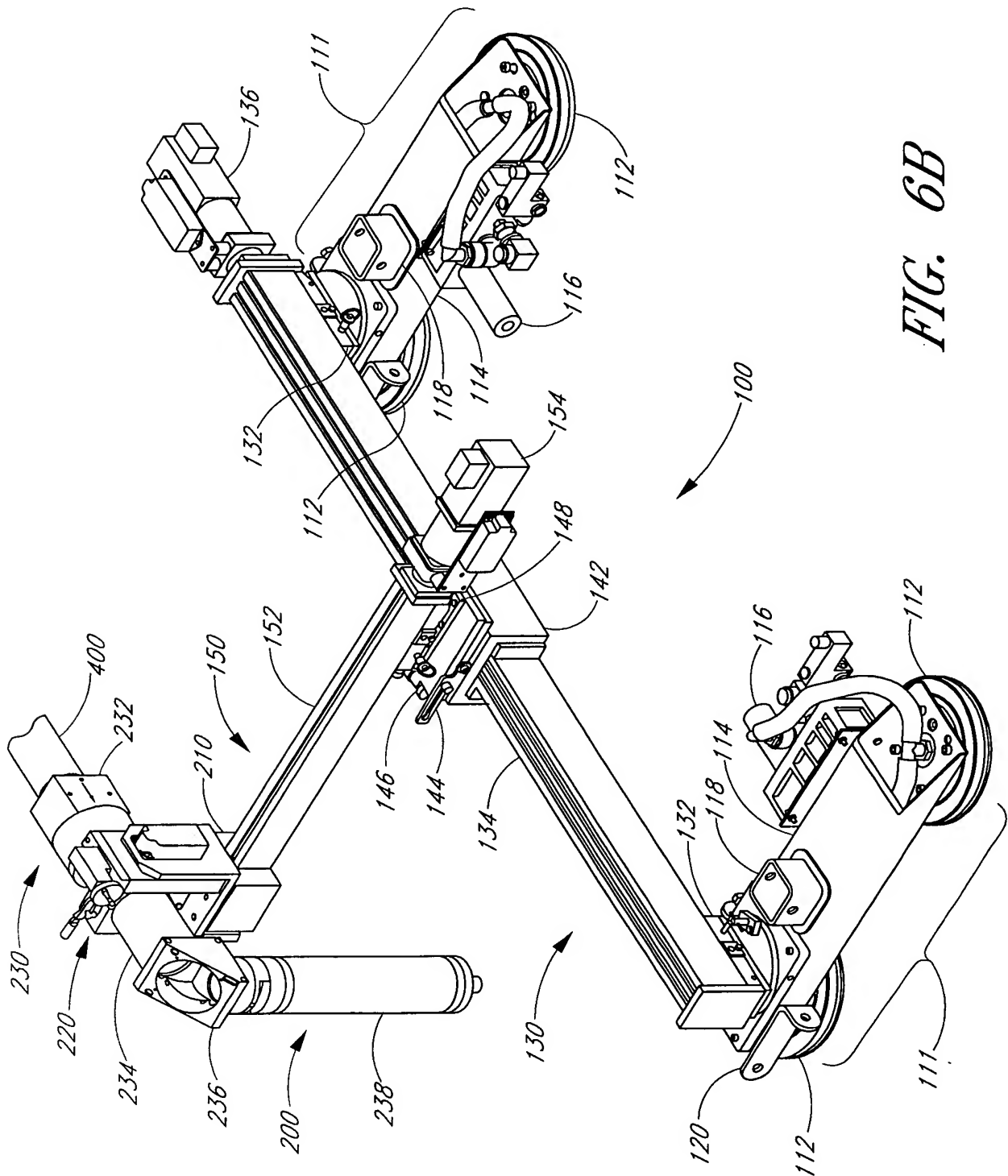
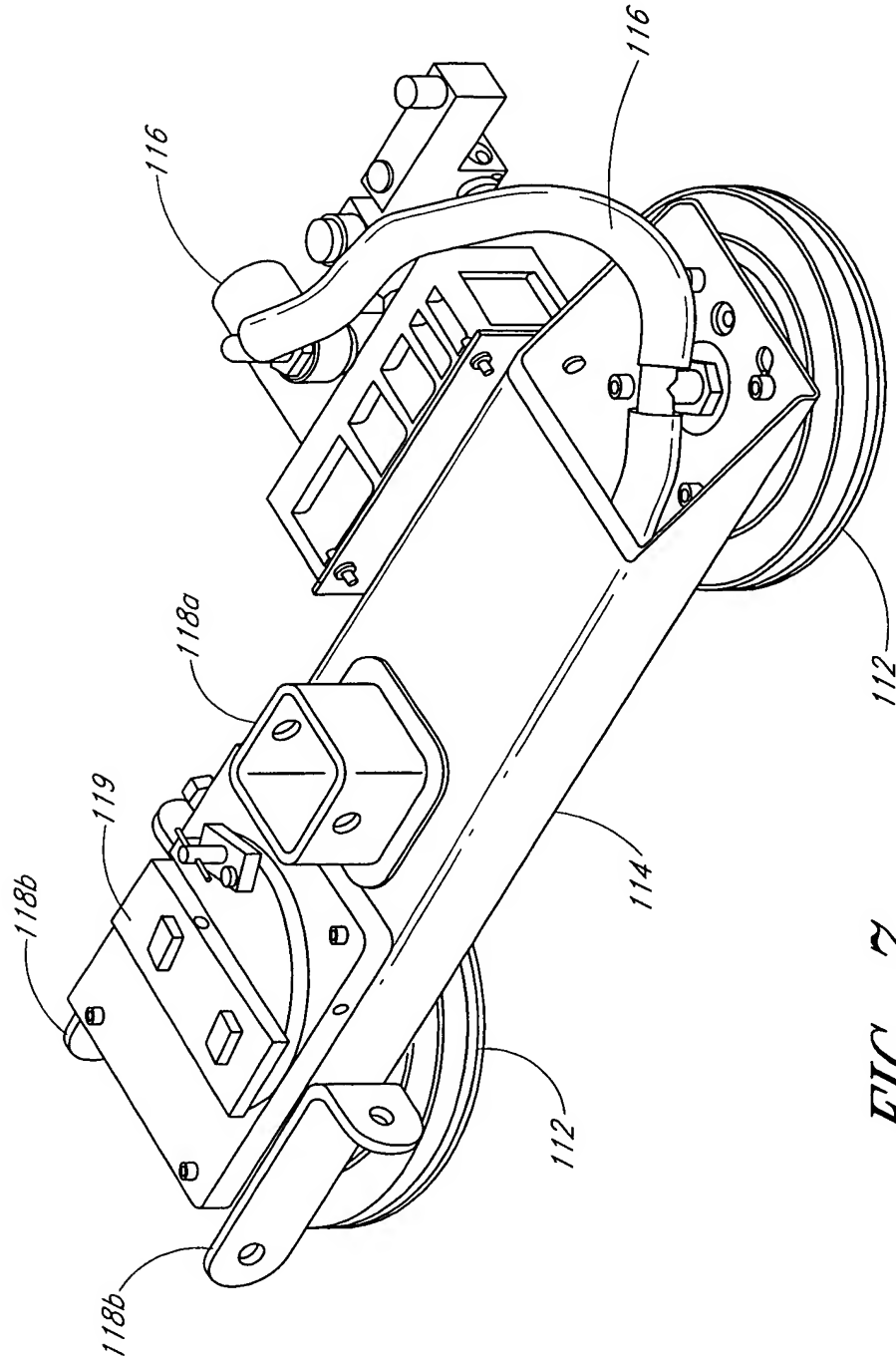
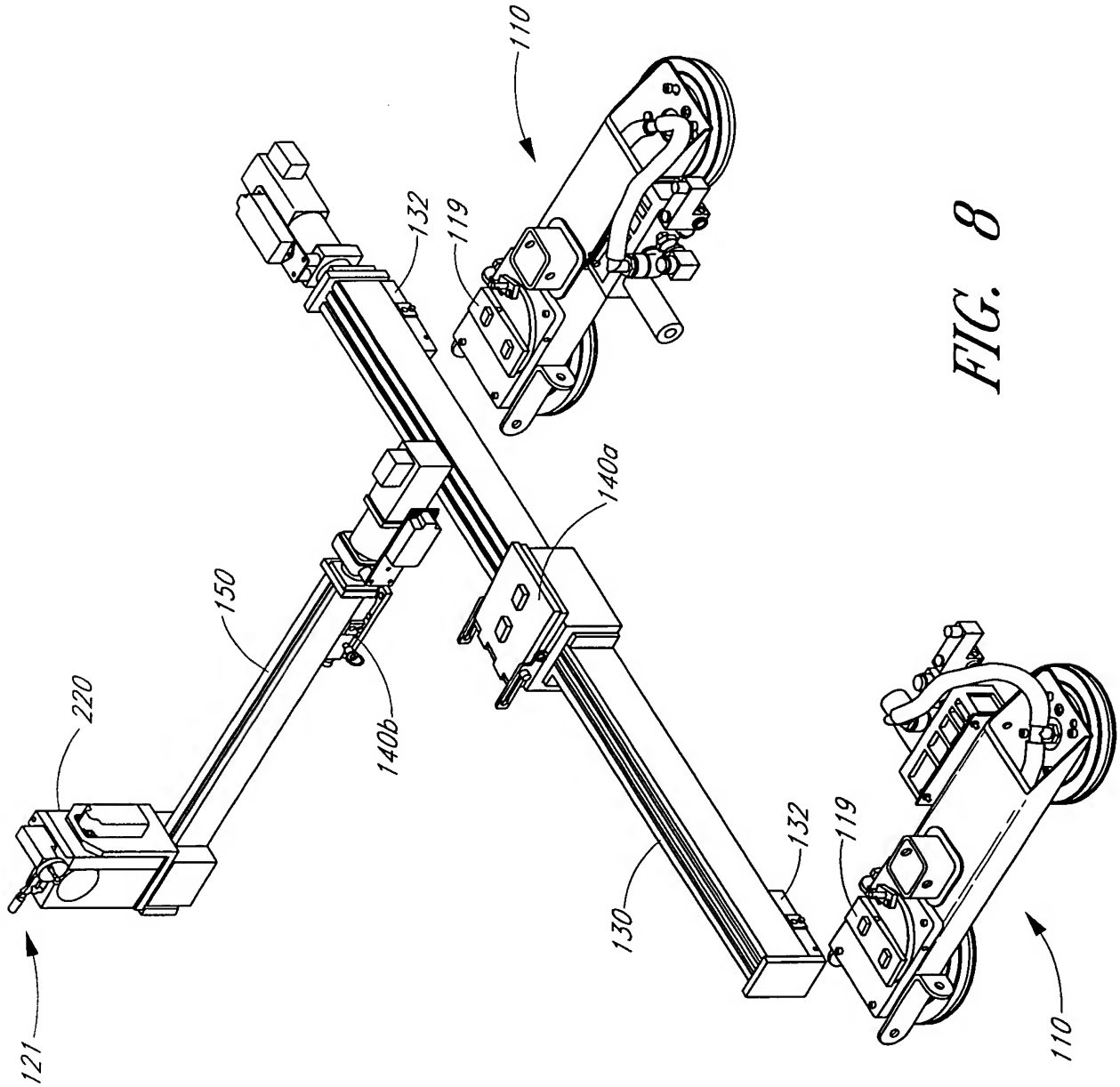


FIG. 6B

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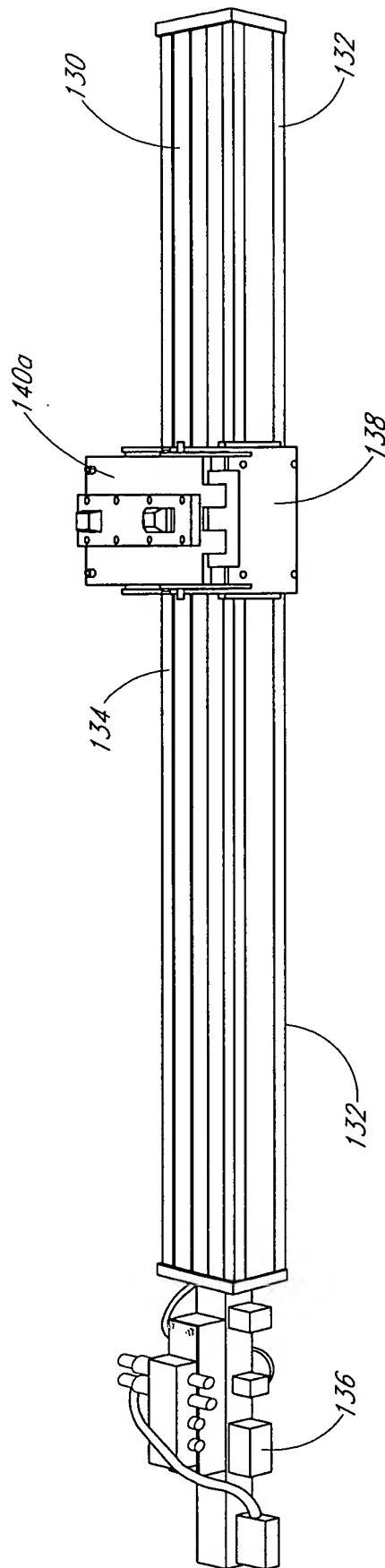


FIG. 9

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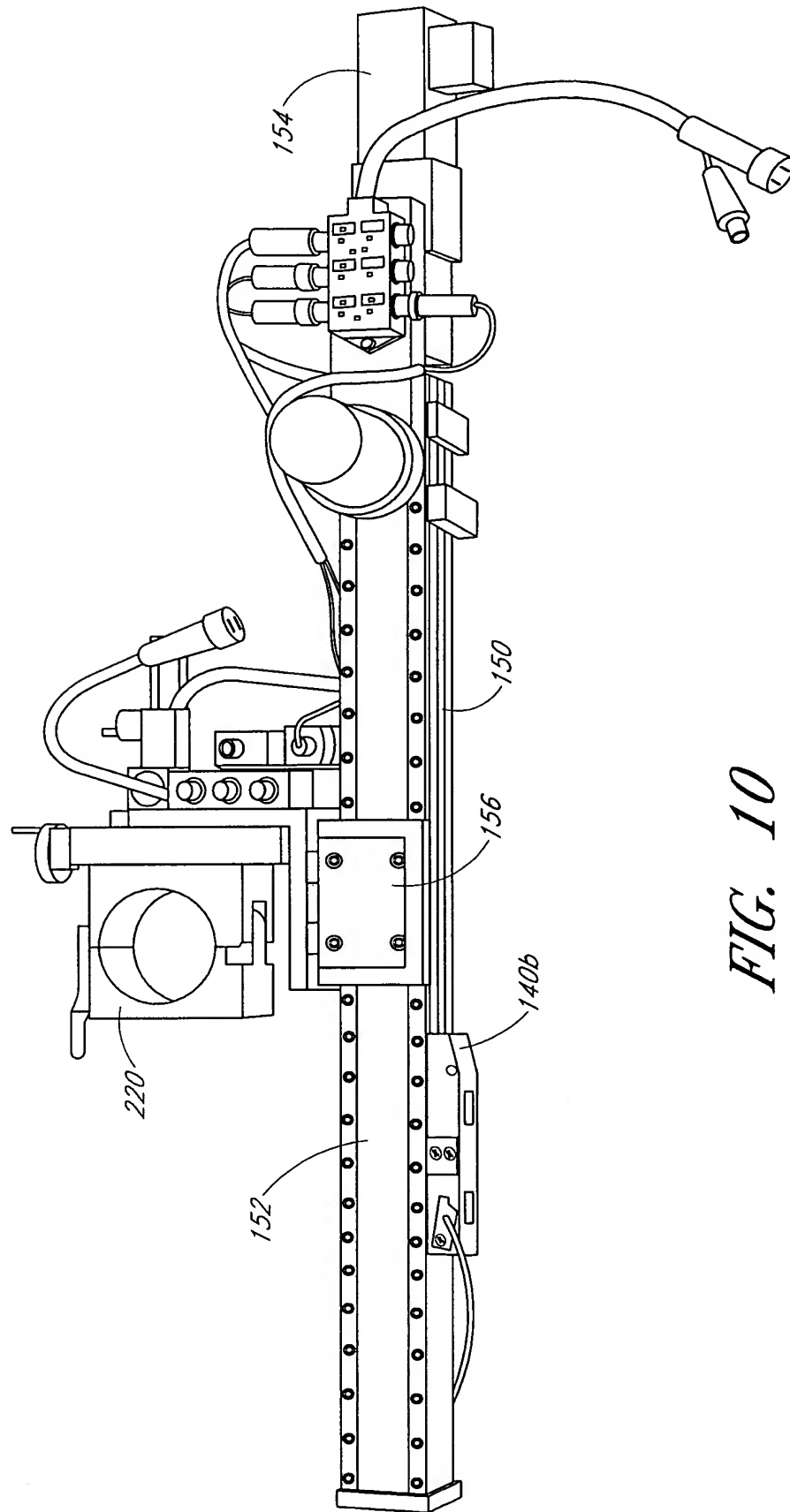


FIG. 10

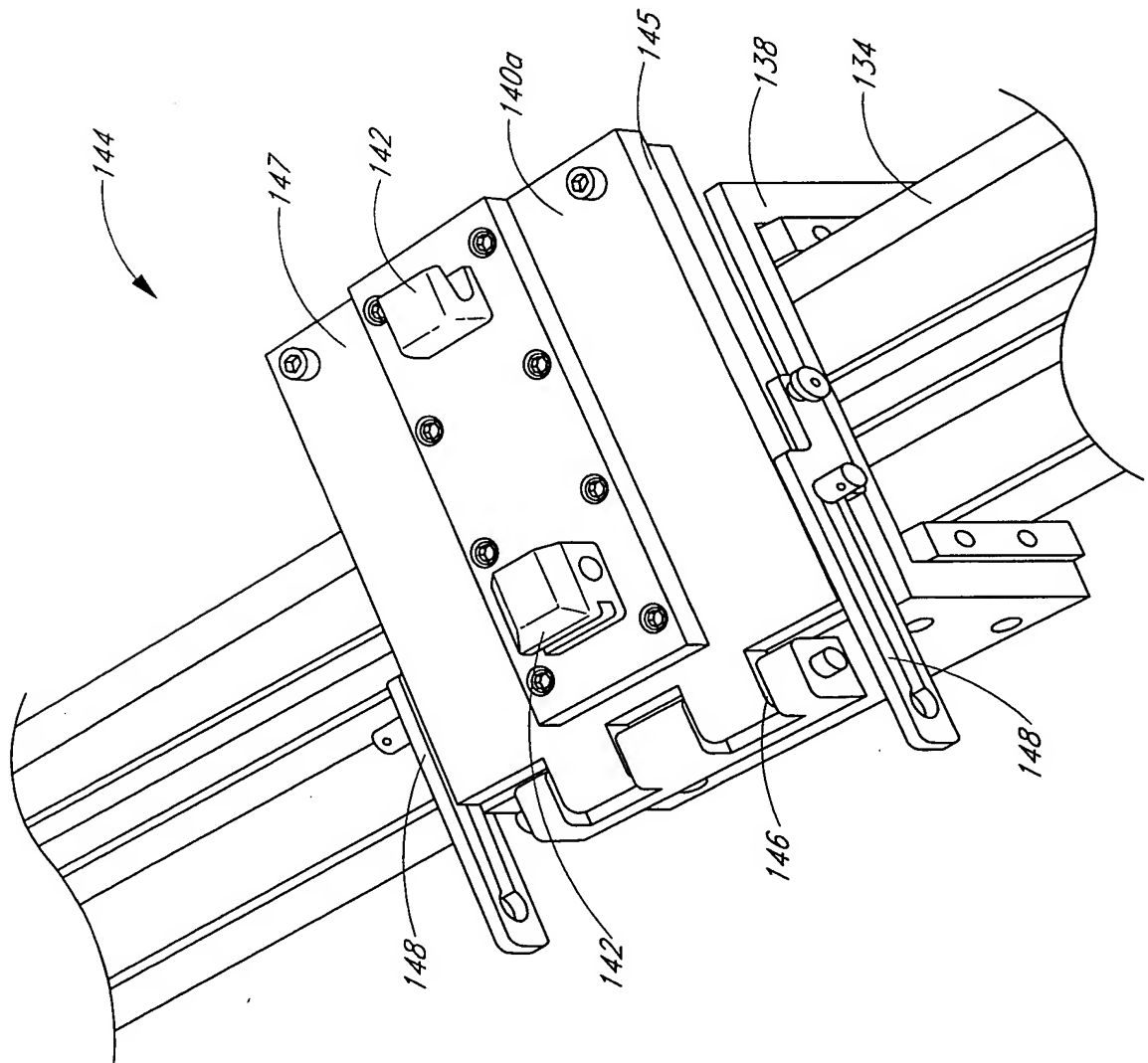
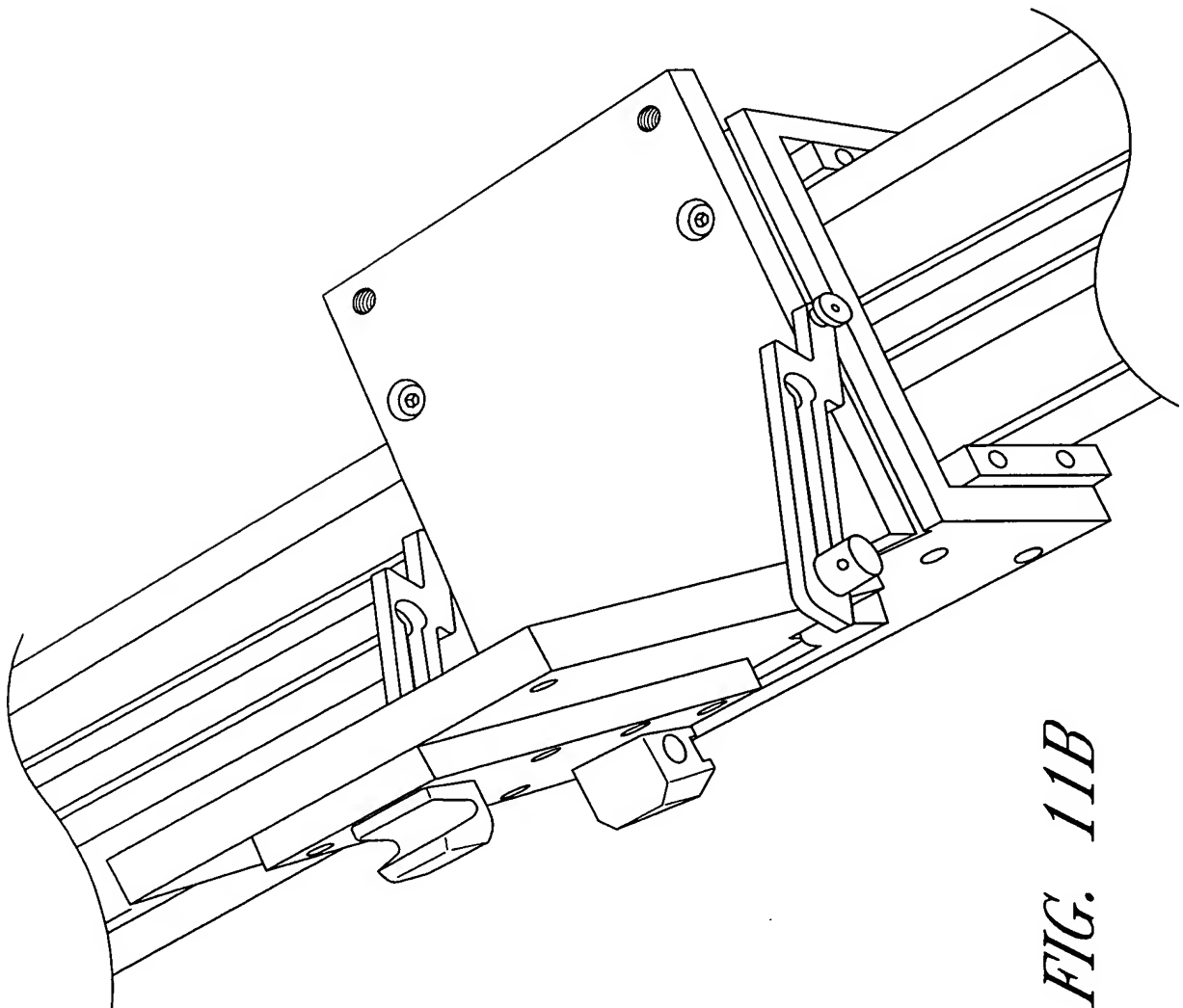


FIG. 11A



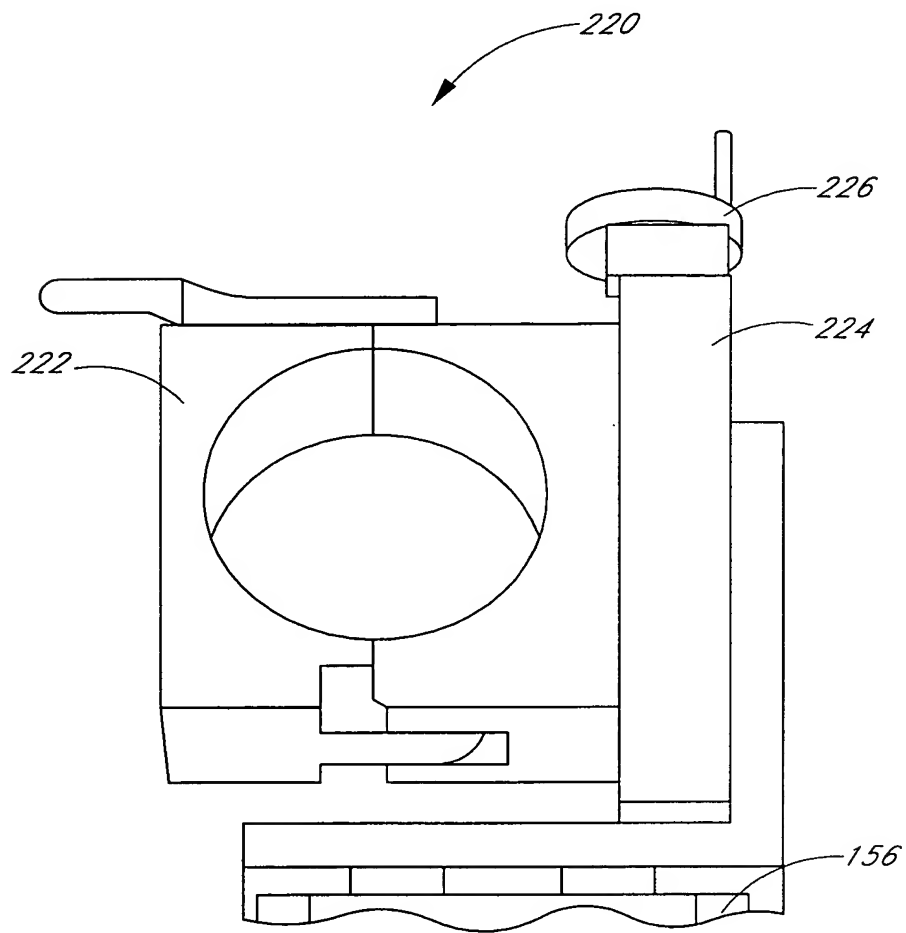
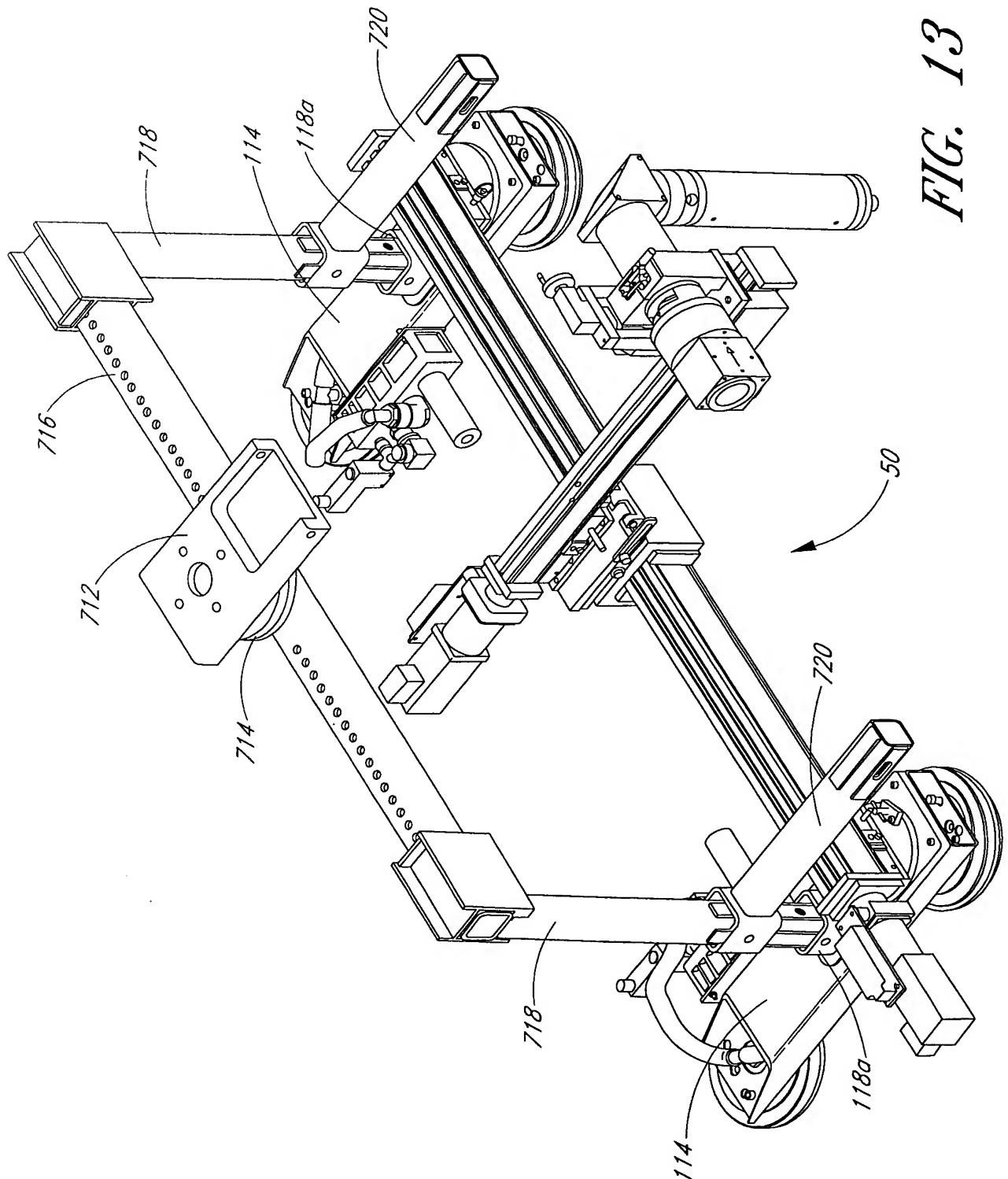


FIG. 12



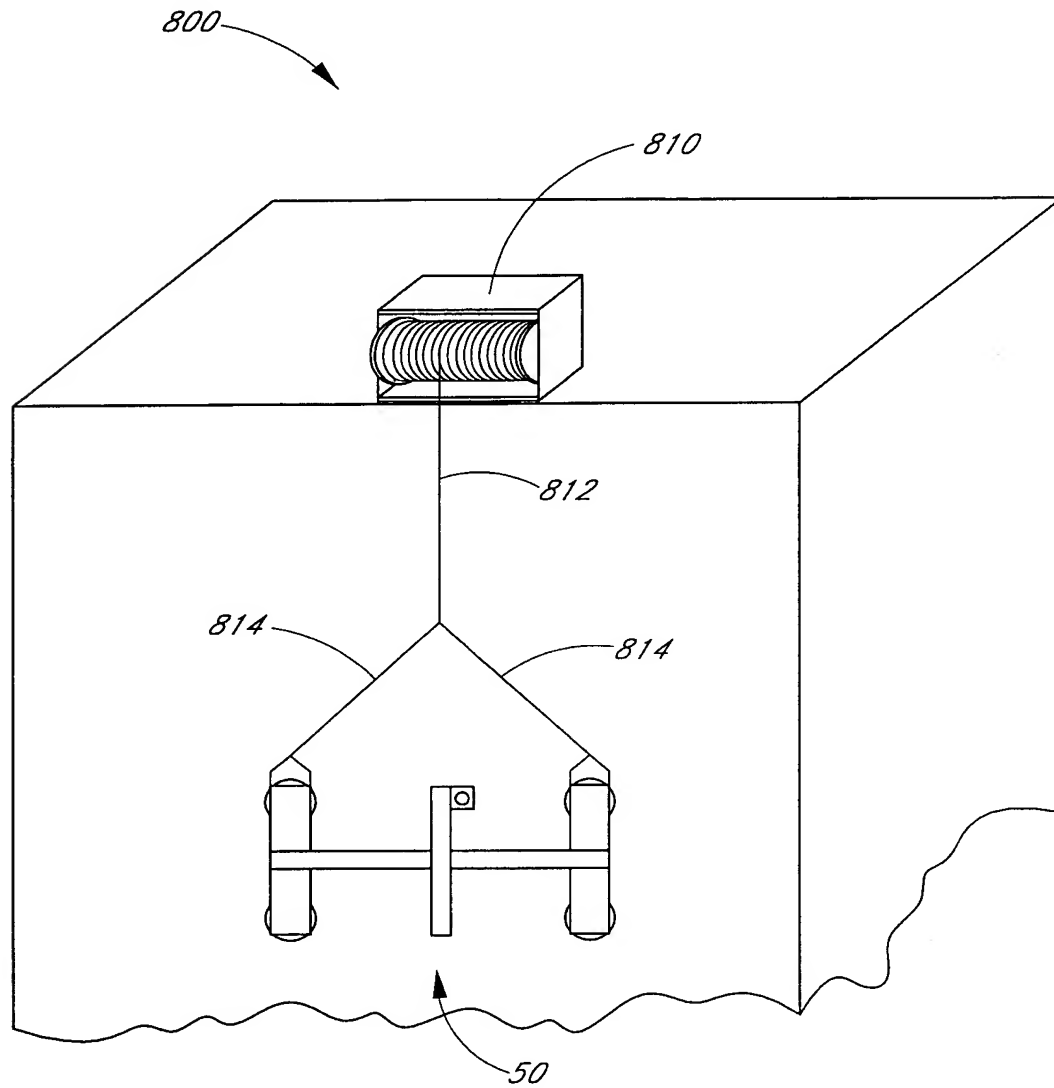
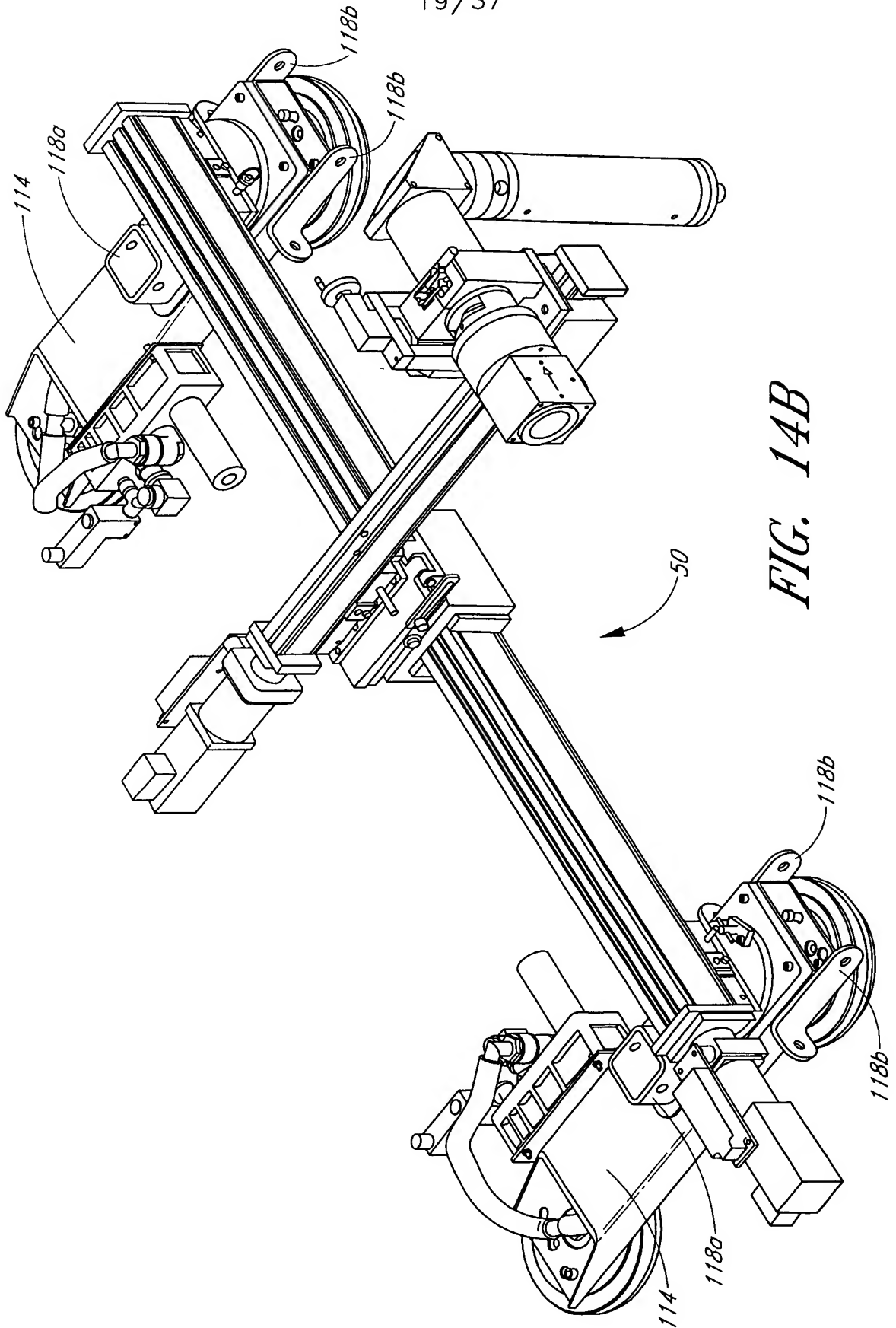


FIG. 14A



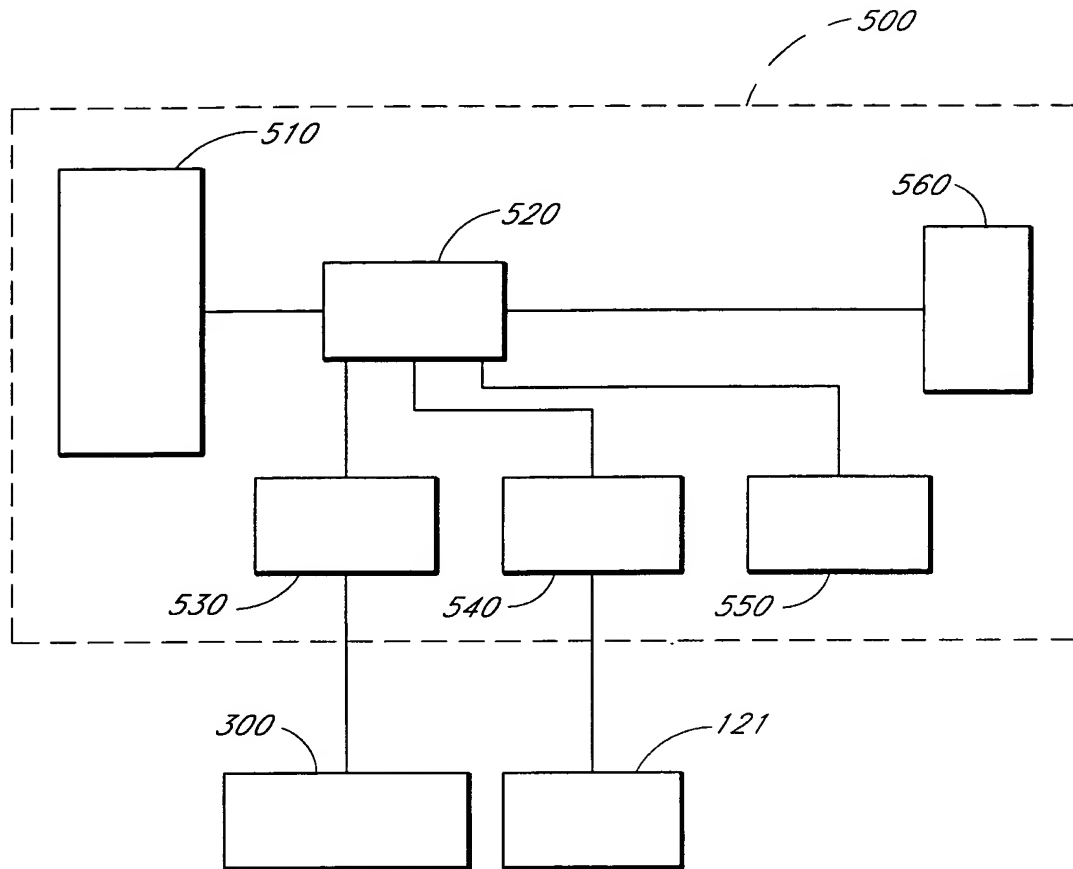


FIG. 15

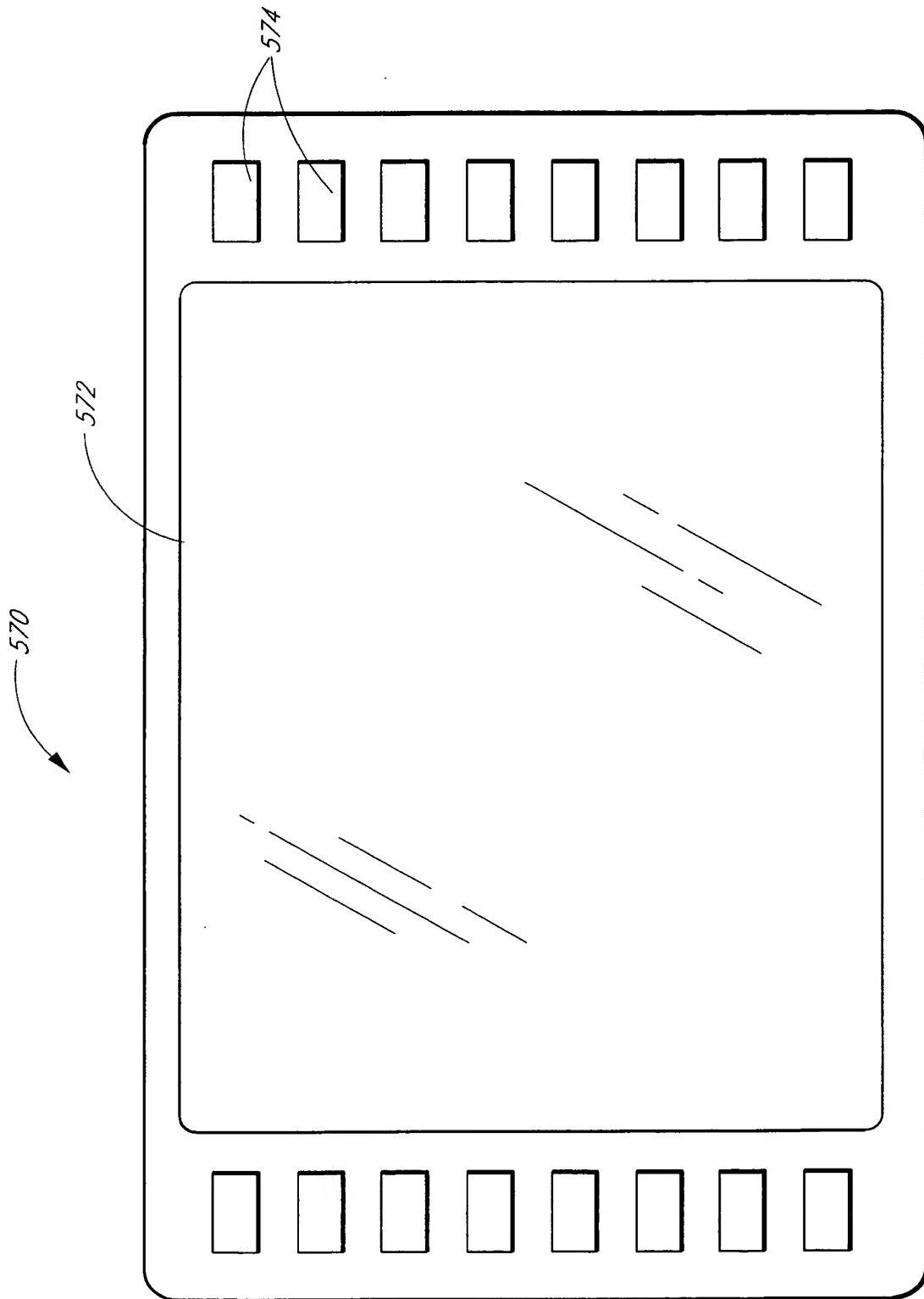


FIG. 16

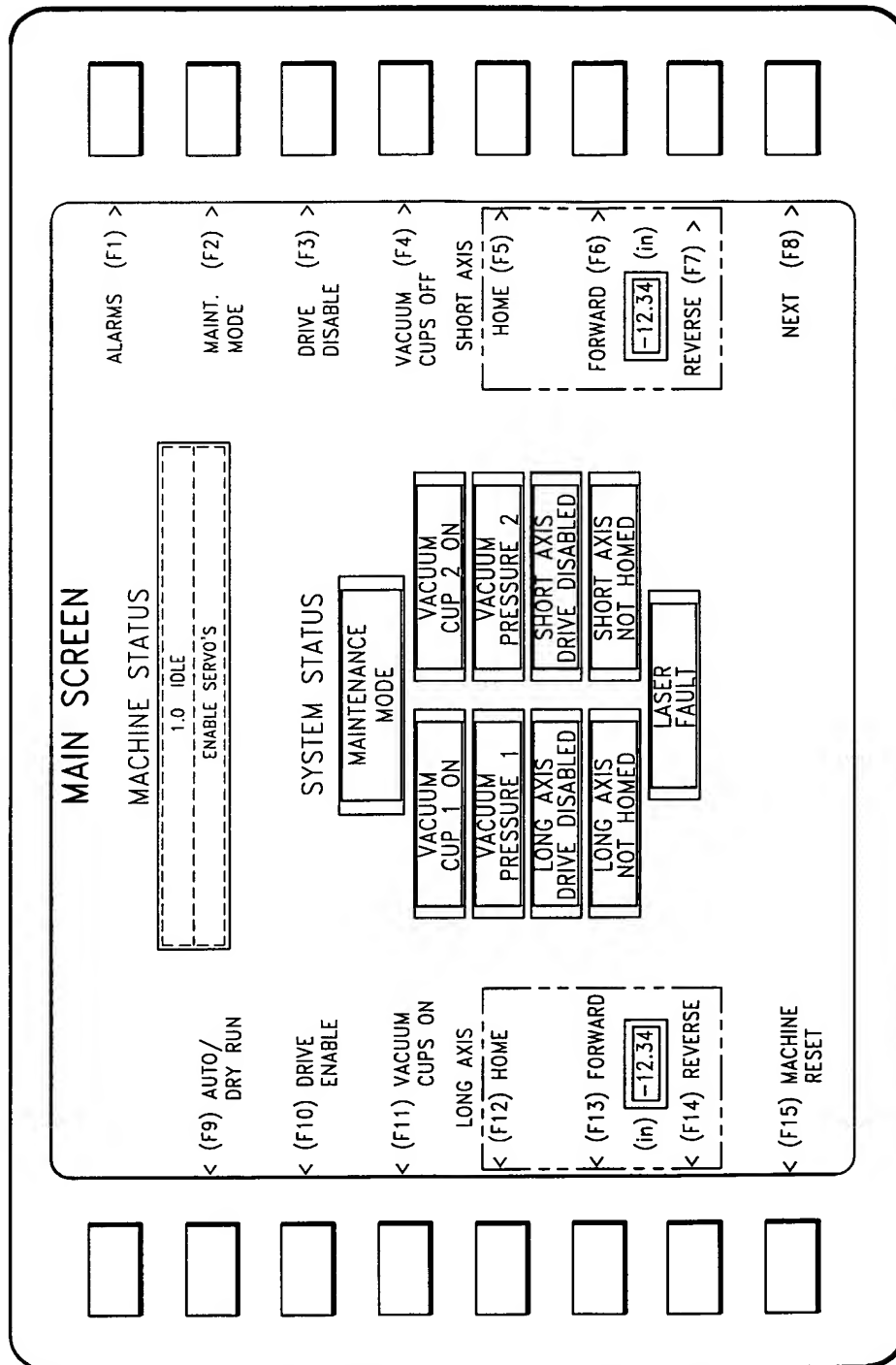


FIG. 17A

SELECT OPERATION SCREEN

< (F9) AUTO/
DRY RUN

< (F11) CIRCLE

< (F12) PIERCE

< (F13) STRAIGHT CUT

< (F14) SURFACE
KEYING

< (F15) MACHINE
RESET

MACHINE STATUS

1.0 IDLE
ENABLE SERVO'S

LONG AXIS
POSITION

-12.34 (in)

SHORT AXIS
POSITION

-12.34 (in)

SYSTEM STATUS

MAINTENANCE
MODE

CIRCLE
IDLE

PIERCE
IDLE

STRAIGHT CUT
IDLE

SURFACE KEYING
IDLE

NEXT (F8) >

FIG. 17B

CIRCLE SETUP/OPERATION SCREEN

< (F9) AUTO/
DRY RUN

MACHINE STATUS

1.0 IDLE
ENABLE SERVO'S

CIRCLE STATUS

2.0 CIRCLE SEQUENCE IDLE
PRESS CYCLE START TO BEGIN

< (F11) CYCLE
START

SYSTEM STATUS

MAINTENANCE
MODE

**LONG AXIS
POSITION**

-12.34 (in)

**SHORT AXIS
POSITION**

-12.34 (in)

> (F4) STOP

CIRCLE PARAMETERS

REVOLUTIONS

STATUS 1234

SET POINT 1234

COUNT 123

DIAMETER (in)

STATUS -1.234

SET POINT -1.234

TIME (sec)

STATUS 1234

SET POINT 1234

PROGRAM NUMBER

SPEED (in/min)

STATUS -12.34

SET POINT -12.34

LBU

STATUS 12

SET POINT 12

< (F15) MACHINE
RESET

> (F8) NEXT

FIG. 17C

PIERCE SETUP/OPERATION SCREEN

MACHINE STATUS

1.0 IDLE
ENABLE SERVO'S

PIERCE STATUS

3.0 PIERCE SEQUENCE IDLE
PRESS CYCLE START TO BEGIN

SYSTEM STATUS

MAINTENANCE
MODE

PIERCE PARAMETERS

LONG AXIS POSITION

-12.34 (in)

SHORT AXIS POSITION

-12.34 (in)

TIME (sec)

STATUS 1234
SET POINT 1234

LBU PROGRAM NUMBER

STATUS 12
SET POINT 12

< (F9) AUTO/
DRY RUN

< (F11) CYCLE
START

< (F15) MACHINE
RESET

CYCLE (F4) >
STOP

NEXT (F8) >

FIG. 17D

CUT SETUP/OPERATION SCREEN

MACHINE STATUS

1.0 IDLE
ENABLE SERVO'S

CUT STATUS

4.0 CUT SEQUENCE IDLE
PRESS CYCLE START TO BEGIN

SYSTEM STATUS

MAINTENANCE
MODE

CUT PARAMETERS

LONG AXIS POSITION

-12.34 (in)

SHORT AXIS POSITION

-12.34 (in)

SPEED (in/min)

LONG AXIS

STATUS -12.34
SET POINT -12.34

SHORT AXIS

STATUS -12.34
SET POINT -12.34

LBU PROGRAM NUMBER

STATUS 12
SET POINT 12

LONG AXIS NOT SELECTED

SHORT AXIS NOT SELECTED

CYCLE START

CYCLE (F4) STOP

LONG AXIS

SHORT AXIS

MACHINE RESET

NEXT (F8) >

FIG. 17E

SURFACE KEYING SETUP/OPERATION SCREEN

< (F9) AUTO/
DRY RUN

MACHINE STATUS

1.0 IDLE

ENABLE SERVO'S

SURFACE KEYING STATUS

5.0 KEYING SEQUENCE IDLE

PRESS CYCLE START TO BEGIN

< (F11) CYCLE
START

SYSTEM STATUS

MAINTENANCE
MODE

SURFACE KEYING PARAMETERS

LONG AXIS
POSITION

-12.34 (in)

SHORT AXIS
POSITION

-12.34 (in)

LBU
PROGRAM NUMBER

STATUS 12

SET POINT 12

STATUS -12.34

SET POINT -12.34

SPEED (in/min)

STATUS -12.34

SET POINT -12.34

STATUS -12.34

SET POINT -12.34

OFFSET (in)

STATUS -12.34

SET POINT -12.34

STATUS -12.34

SET POINT -12.34

LONG AXIS
LENGTH (in)

STATUS -12.34

SET POINT -12.34

STATUS -12.34

SET POINT -12.34

NEXT (F8) >

CYCLE (F4) >
STOP

< (F15) MACHINE
RESET

FIG. 17F

Diagram of the FAULT SCREEN interface. The screen is divided into three main sections. The top section is labeled "FAULT SCREEN" and contains a large rectangular area for displaying error messages. The bottom left section is labeled "< (F9) AUTO/ DRY RUN" and contains a small rectangular area for displaying the date "mm/dd/yy". The bottom right section is labeled "< (F15) MACHINE RESET" and contains a small rectangular area for displaying the date "mm/dd/yy". The right side of the screen features a vertical column of eight rectangular buttons labeled "RETURN (F1) >", "ACK ALL (F3) >", and "NEXT (F8) >" (repeated three times).

FIG. 17G.

MAINTENANCE SCREEN

WARNING:
OPERATION FROM THIS SCREEN
BYPASSES SYSTEM INTERLOCKS

SYSTEM STATUS

MAINTENANCE MODE

VACUUM CUP 1 ON

VACUUM CUP 2 ON

VACUUM PRESSURE 1

VACUUM PRESSURE 2

LONG AXIS DRIVE DISABLED

SHORT AXIS DRIVE DISABLED

LASER AIR SOLENOID OFF

LASER AIR PRESSURE

LONG AXIS NOT HOMED

SHORT AXIS NOT HOMED

ALARMS (F1) >

LASER AIR (F2) >
ON/OFF

DRIVE (F3) >
DISABLE

VACUUM (F4) >
CUPS OFF

SHORT AXIS
HOME (F5) >

FORWARD (F6) >
[-12.34] (in)

REVERSE (F7) >

NEXT (F8) >

< (F9) AUTO/
DRY RUN

< (F10) DRIVE
ENABLE

< (F11) VACUUM
CUPS ON

LONG AXIS
< (F12) HOME

< (F13) FORWARD
(in) [-12.34]

< (F14) REVERSE

< (F15) MACHINE
RESET

JOG SPEED
(in/min)

STATUS [-12.34]
 SET POINT [-12.34]

FIG. 17H

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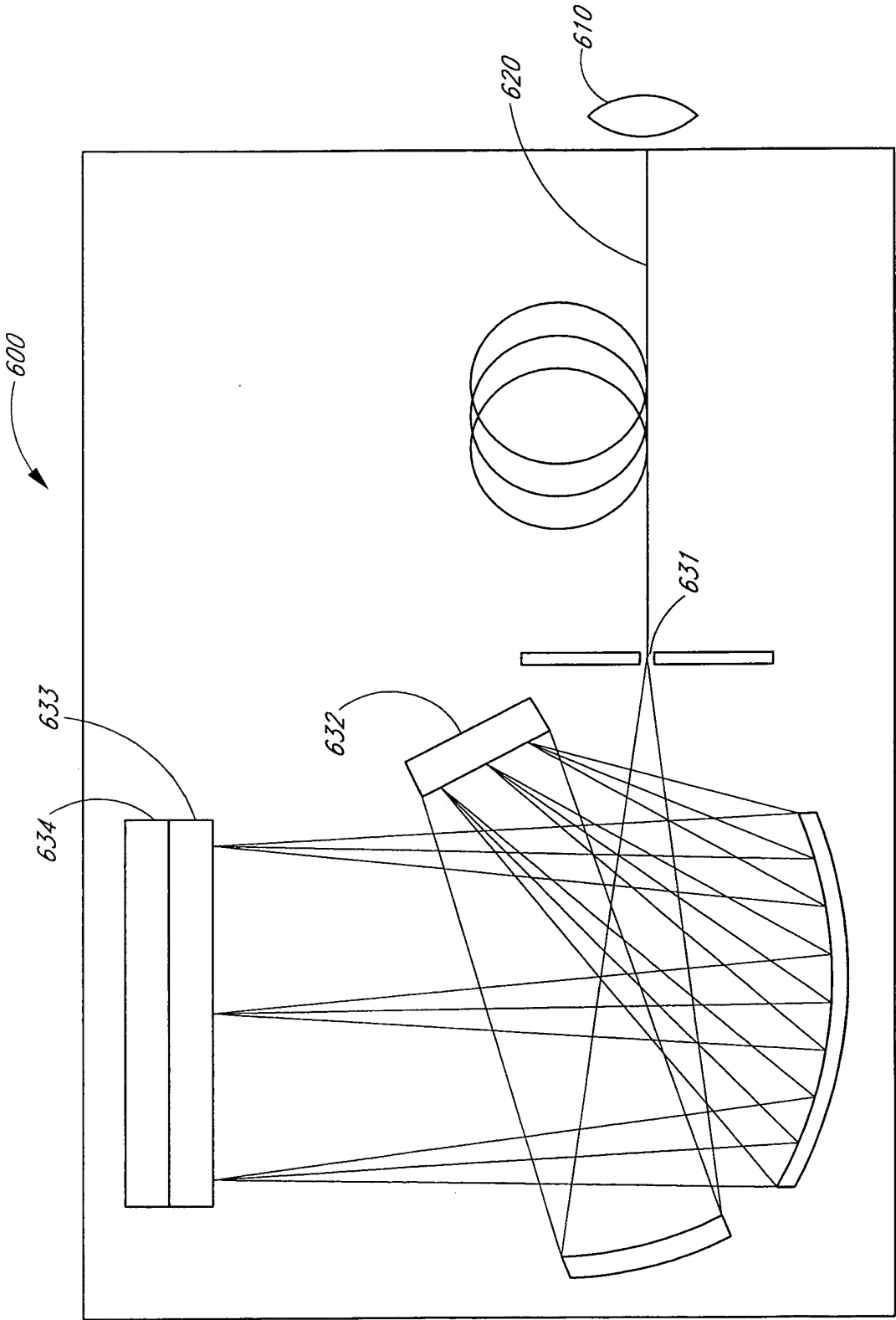


FIG. 18A

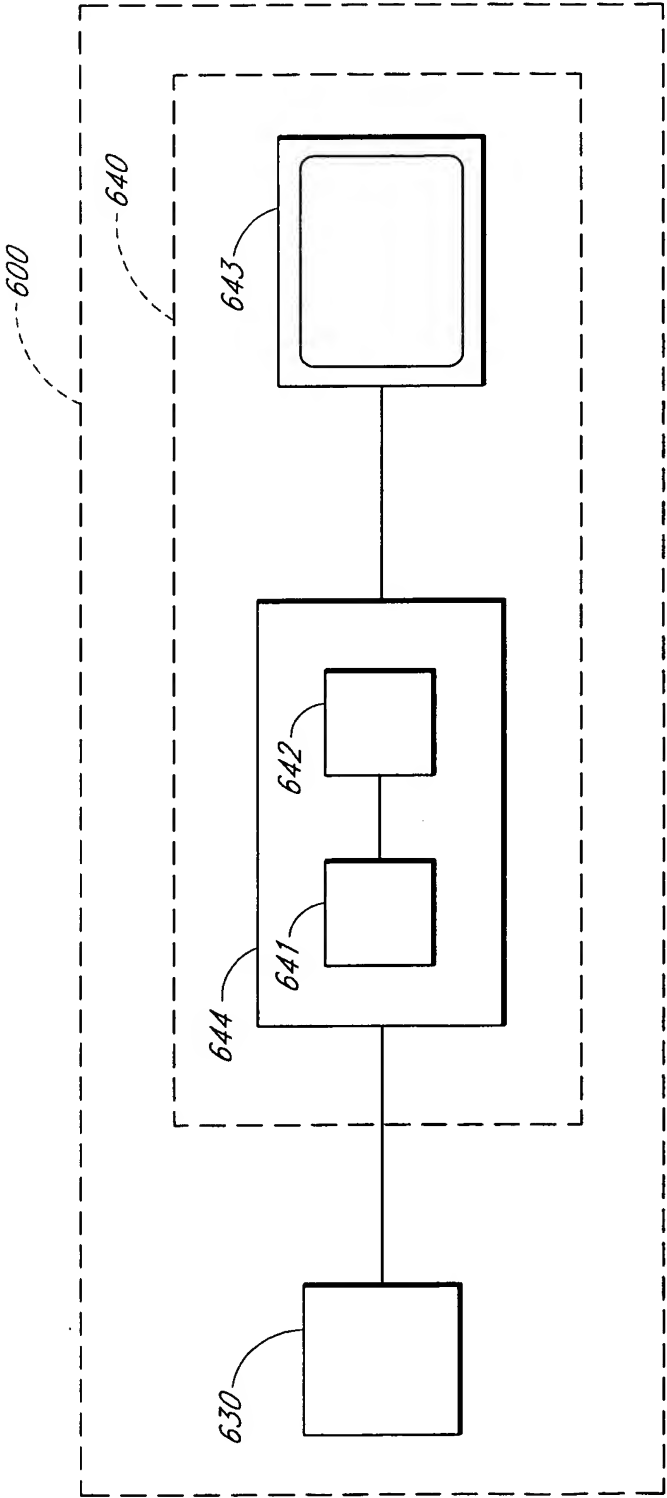


FIG. 18B

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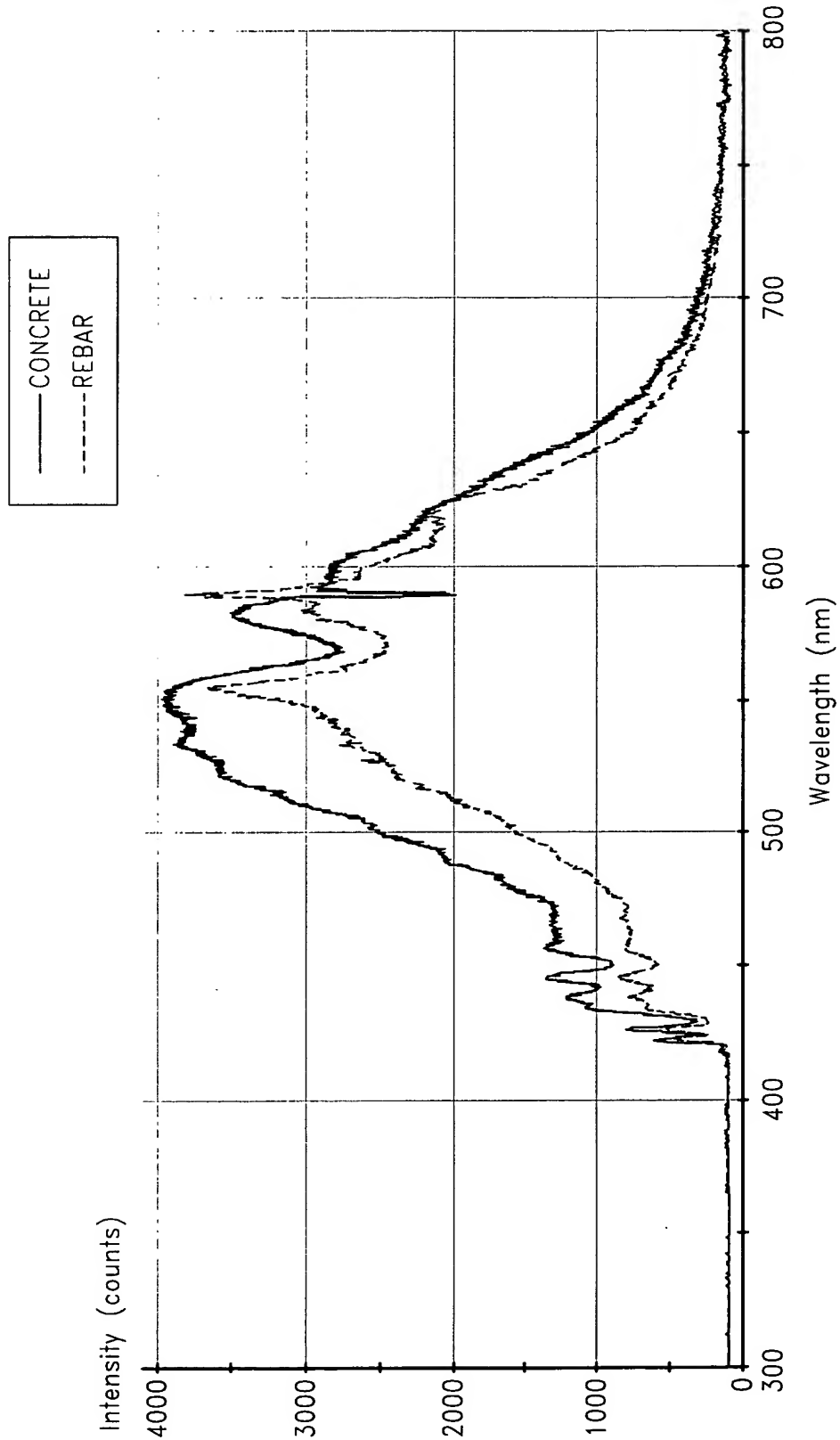


FIG. 19

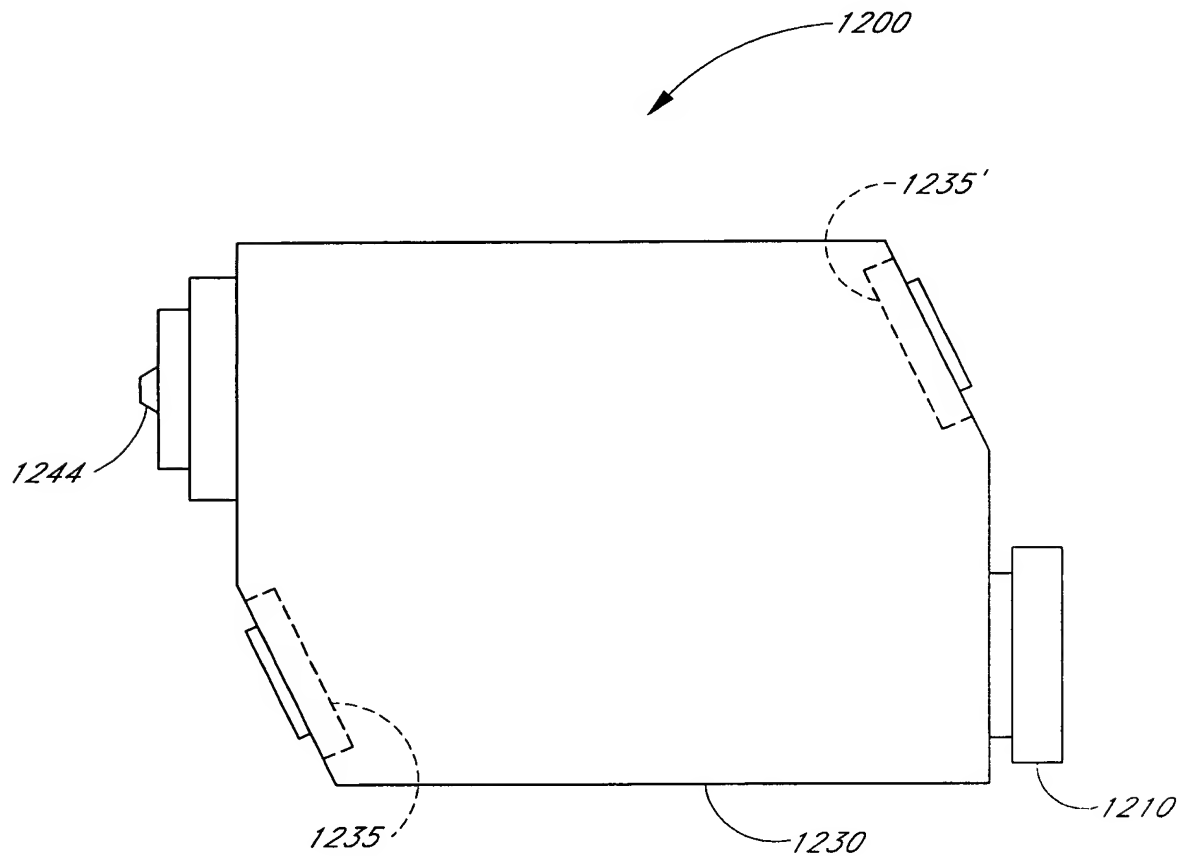


FIG. 20

FIG. 21A

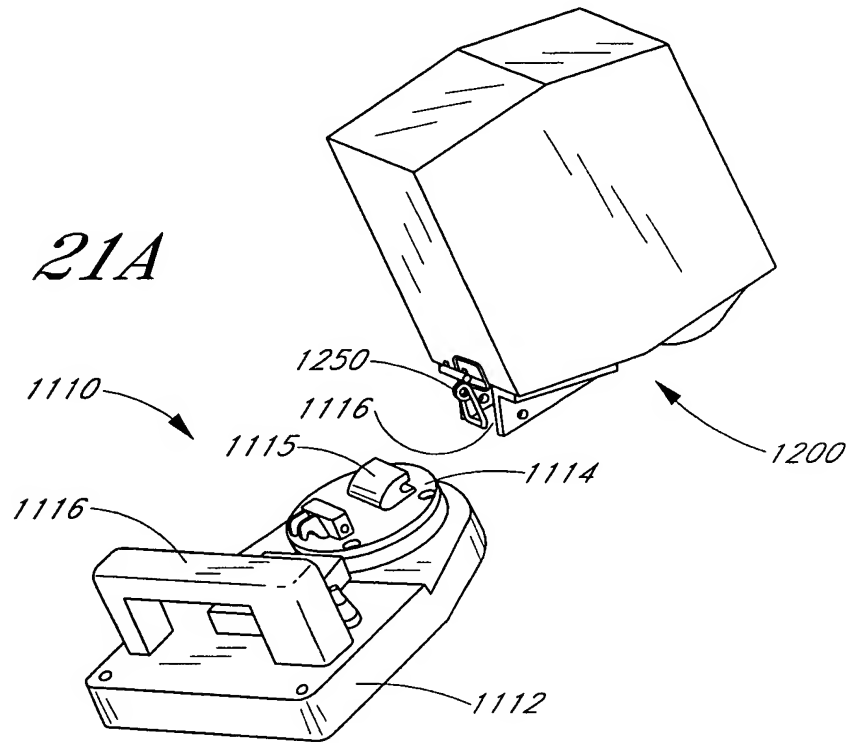
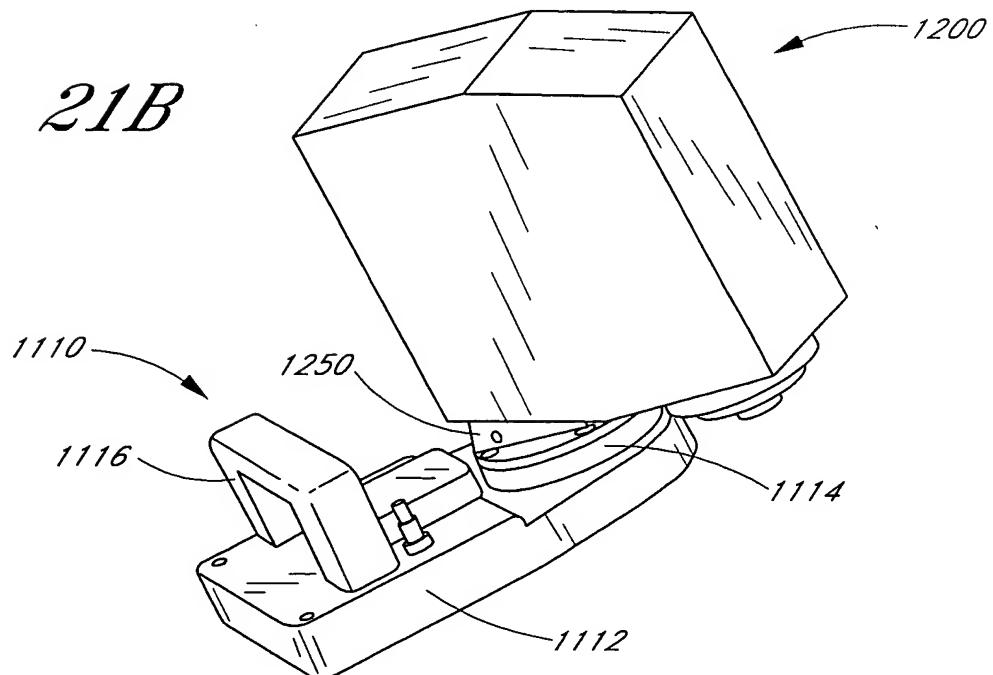


FIG. 21B



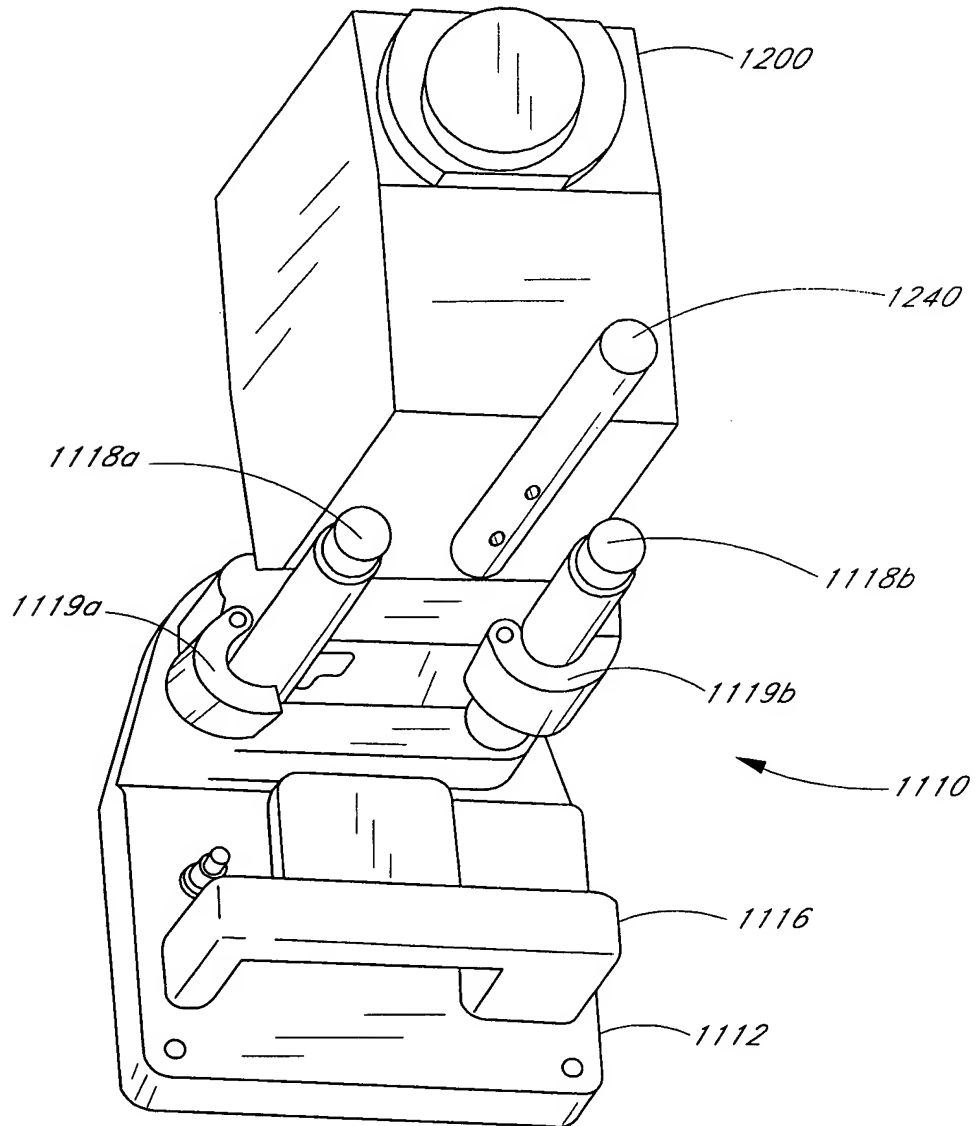


FIG. 21C

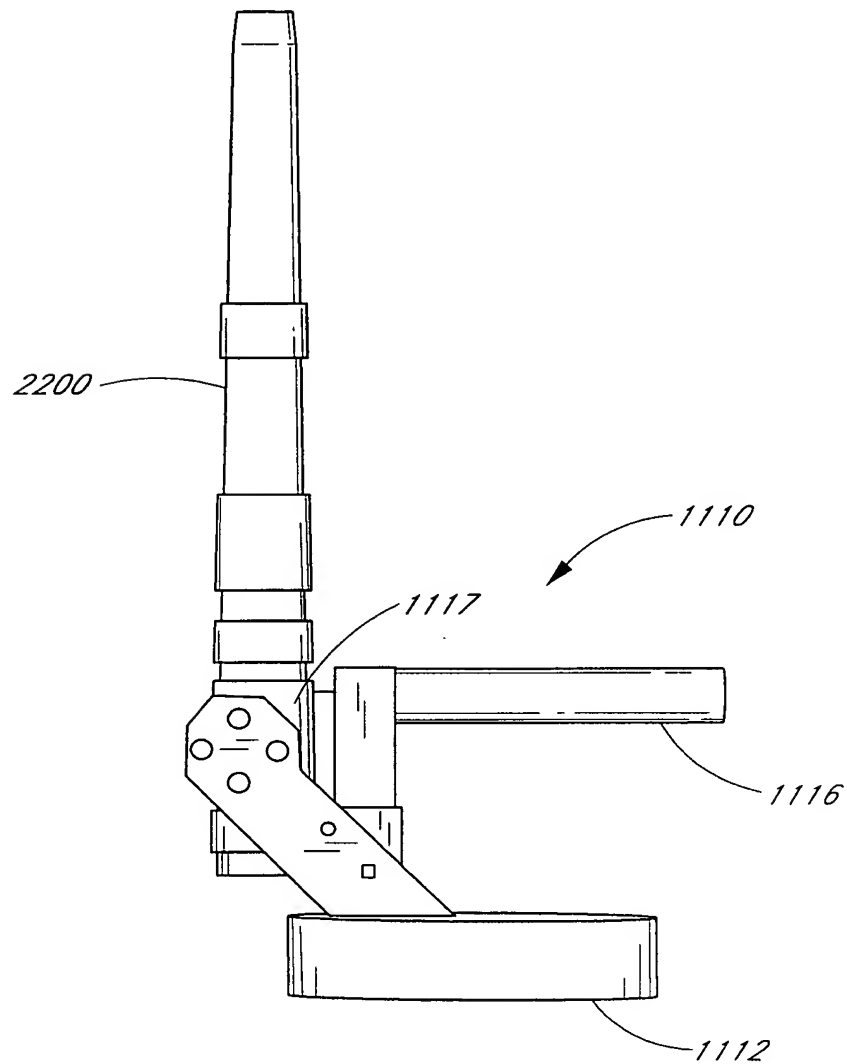


FIG. 21D

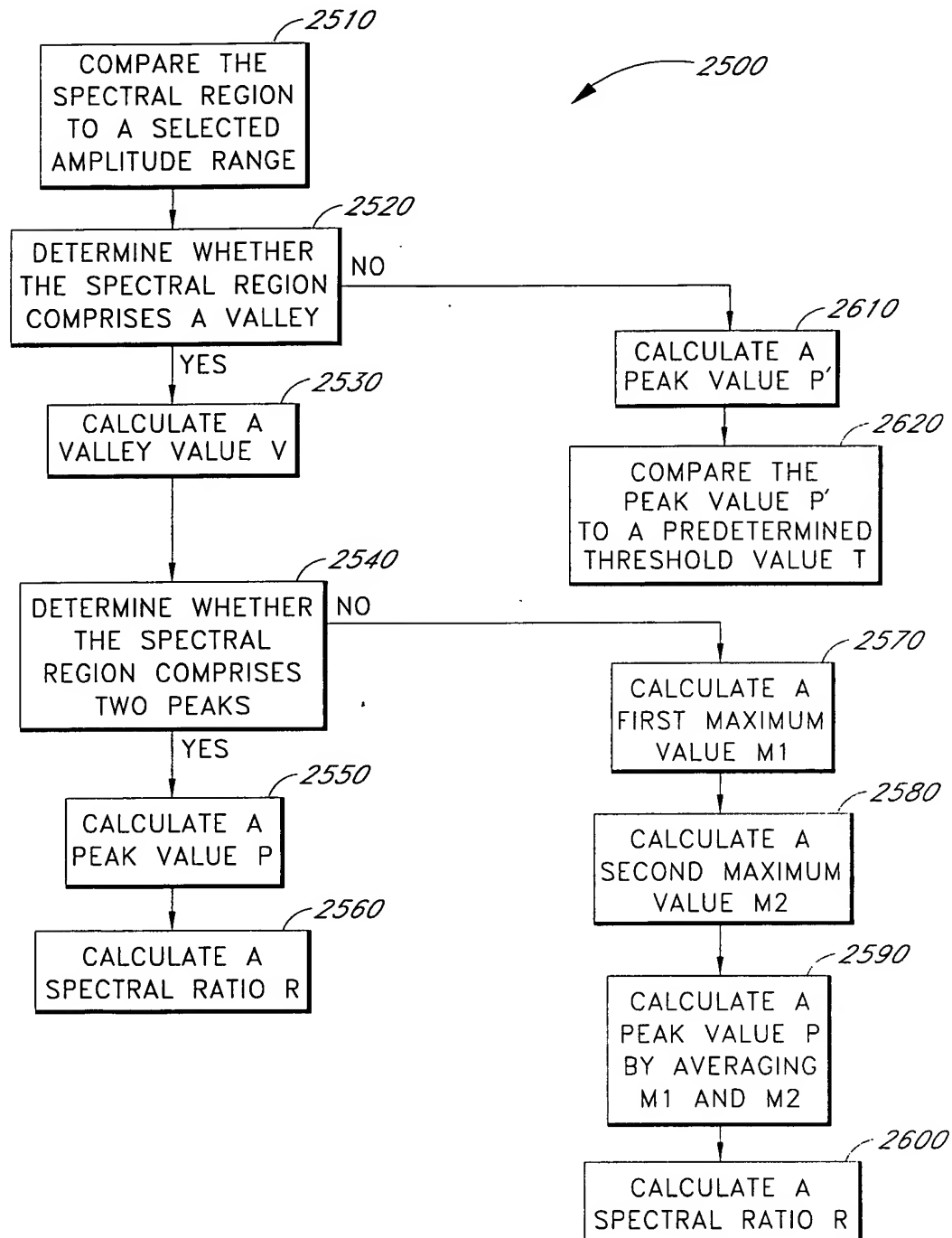


FIG. 22